REMARKS

Upon entry of this amendment, claims 12 and 13 are all of the claims pending in the application. Claims 5-11 have been canceled by this amendment, and new claims 12 and 13 have been added. No new matter has been added.

I. Objections to the Specification

A. The Examiner has objected to the specification because the Examiner believes that the specification does not clearly describe how the cutting unit may be constructed so that it moves at first independently from the guide piece to the guide piece and then moves with the guide piece while cutting the bottom portion of the corrugated fin material (see page 11, lines 1-5 of the Specification).

In response, Applicants submit that one reasonably skilled in the art would understand, based on the information set forth in the specification coupled with information known in the art, how a cutting unit and guide piece could be constructed as described above.

For example, Applicants note that it would be understood that it is not necessary that the cutting unit (e.g., a cutting blade) and the guide piece be driven by a single drive unit, such as an electric motor. Instead, they could be driven by two drive units. In such a circumstance, the guide piece could be arranged at a downstream side of the cutting unit, and when the guide piece is moved in the conveying direction to restrain the bottom portion of the corrugated fin material, the cutting blade could be driven to approach the guide piece.

When the cutting blade reaches the guide piece and passes the worms, it could be moved along the guide piece to cut off the bottom portion of the corrugated fin material while moving

together with the guide piece and the fin material. Therefore, the cutting blade and the guide piece do not need to be driven by one drive unit at the first stage of the operation of the cutting device for the corrugated fin material.

In view of the foregoing, Applicants respectfully submit that one reasonably skilled in the art would understand how a cutting unit and guide piece could be constructed as described above, and further, would be able to make and use the present invention based on the information set forth in the specification coupled with information known in the art without undue experimentation.

B. The specification has also been objected to because the Examiner believes that it is unclear how the guide piece stops at the bottom portion while the cutting unit keeps moving downwardly to shear off the corrugated fin material. The Examiner has pointed to Fig. 5 of the application.

In this regard, Applicants note that Fig. 5 shows a state before the cutting blade 4 moves downwardly to shear off the corrugated fin material. In particular, Fig. 5 shows the state where the guide piece 2 approaches the bottom of the corrugated fin material, with the guide piece 2 and the cutting blade 4 moving in the conveying direction of the corrugated fin material (see page 8, line 29 through page 9, line 3; and page 9, lines 15-18).

Thus, in Fig. 5 of the application, the cutting blade 4 is located over the pair of worms 1, and is moving together with the guide piece 2 in the conveying direction. In contrast, in Fig. 6, a subsequent state is shown in which the guide piece 2 and the cutting blade 4 have passed the

worms 1 such that the cutting blade 4 is able to move downwardly along the guide piece 2 so as to cut the bottom portion of the corrugated fin material (see pages 9, lines 20-23).

Accordingly, Applicants respectfully submit that the specification clearly indicates that after approaching the bottom of the corrugated fin material, the guide piece 2 continues to move in a conveying direction, and after having passed the worms 1, the cutting blade 4 moves downwardly along the guide piece 2 so as to cut the corrugated fin material. Further, Applicants note that the specification also indicates that "it is needless to say that the moving ranges for moving the guide piece 2 and the cutting blades 3 in synchronization with the fin material 10 can be set according to each case" (see page 10, lines 29-31).

In view of the foregoing, Applicants respectfully submit that one reasonably skilled in the art would understand the above-noted sequence of operations, and further, would be able to make and use the present invention based on the information set forth in the specification coupled with information known in the art without undue experimentation.

C. The specification has also been objected because the Examiner believes that is unclear how the cutting unit 4 can go through the space between the worms 1 so that it can shear off the corrugated fin material since the width of the cutting blade 4 is greater than the space between the worms 1.

As described above, and as shown in Figs. 5-6, the guide piece 2 and the cutting blade 4 move in a conveying direction of the fin material so as to pass the worms 1 (see page 9, lines 20-23 of the specification). After passing the worms 1, the cutting blade 4 moves in a downward direction along the guide piece 2 so as to cut the fin material (see Fig. 6 and page 9, lines 20-23

of the specification). Thus, the cutting blade 4 only moves downwardly after having passed the worms 1, and therefore, it is irrelevant if the cutting blade is wider than the space between the worms 1 (see Fig. 6). For the Examiner's reference, Applicants note that the guide piece 2 is formed so as to have a top portion narrower than the space between the worms, and therefore, is able to pass through the space between the worms 1 (see Figs. 3 and 5).

In view of the foregoing, Applicants respectfully submit that one reasonably skilled in the art would understand the above-noted sequence of operations, and further, would be able to make and use the present invention based on the information set forth in the specification coupled with information known in the art without undue experimentation.

II. Drawing Objections

The drawings have been objected to under 37 CFR 1.83(a) for not showing every feature of the invention specified in the claims. In particular, the Examiner asserts that the mechanism for the guide piece to guide the cutting unit in claims 5 and 10 must be shown or the features canceled from the claims. Applicants note that new claims 12 and 13 do not recite such a feature, and therefore, kindly request that the objection to the drawings be withdrawn.

III. Claim Rejections under 35 U.S.C. § 112, first paragraph

Claims 5-11 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. To facilitate the Examiner's reconsideration of the application, and to more clearly define the novel features of the present invention, claims 5-11 have been canceled

and are replaced with new claims 12 and 13. Applicants submit that each of the new claims has been drafted to ensure compliance with the requirements of 35 U.S.C. 112, first paragraph.

Regarding the operations of the guide piece and the cutting unit as noted by the Examiner in the Office Action, as explained above, Applicants note that the guide piece 2 and the cutting blade 4 move in a conveying direction of the fin material so as to pass the worms 1 (see page 9, lines 20-23 of the specification). After passing the worms 1, the cutting blade 4 moves in a downward direction along the guide piece 2 so as to cut the fin material (see Fig. 6 and page 9, lines 20-23 of the specification).

Applicants respectfully submit that one reasonably skilled in the art would understand the above-noted sequence of operations, and further, would be able to make and use the present invention based on the information set forth in the specification coupled with information known in the art without undue experimentation.

IV. Claim Rejections under 35 U.S.C. § 112, second paragraph

Claim 8 was rejected under 35 U.S.C. 112, second paragraph, because the phrase "the worms" did not have sufficient antecedent basis. As noted above, claim 8 has been canceled by this amendment. Further, Applicants submit that claims 12 and 13 have been drafted so as to ensure compliance with the requirements of 35 U.S.C. 112, second paragraph.

V. Claim Rejections under 35 U.S.C. § 102 and 35 U.S.C.§ 103

Claims 5, 9, 10 and 11 were rejected under 35 U.S.C. 102(b) as being anticipated by Maruyama (4,525,500), and claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Maruyama (4,523,500) in view of Nozaki (JP 5-23912).

As noted above, claims 5-11 have been canceled by this amendment and are replaced with new claims 12 and 13 in order to further distinguish the present invention from the references applied by the Examiner. Therefore, the above-mentioned rejections are submitted to be in applicable to the new claims for at least the following reasons.

New claim 12 recites the features of a guide piece having a top portion smaller in width than a space formed between two worms so that the top portion is insertable between adjacent shoulder portions of the corrugated fin material, and a cutting blade movable in a conveying direction and along the guide piece in a cutting direction to cut the bottom portion of the fin material in a state where the guide piece is inserted between adjacent shoulder portions of the conveying corrugated fin material after the cutting blade passes the worms. Applicants respectfully submit that the combination of Maruyama and Nozaki does not disclose, suggest or otherwise render obvious such a combination of features.

Regarding Maruyama, Applicants note that this reference discloses a cutting device which includes a cutter blade 113 and a cutter receiver 111, both of which extend outward through a slit 105a formed on a casing 105 (see Fig. 5 and col. 4, lines 59-61). As shown in Figs. 4 and 5 of Maruyama, a corrugated member 11 is passed through the space between the cutter receiver 111 and the cutter blade 113 on the outside of slit 105a, wherein the top end of the cutter blade 113 is

gripped between the lower extensions 115b and 116b of the cutter receiver 111 (see col. 4, lines 61-64 and col. 5, lines 7-9).

Applicants respectfully submit, however, that while Maruyama discloses a cutter receiver 111 that receives a cutter blade 113 so as to cut a corrugated member, that Maruyama does not disclose or suggest a guide piece having a top portion smaller in width than a space formed between two worms so that the top portion is insertable between adjacent shoulder portions of the corrugated fin material, and a cutting blade movable in a conveying direction and along the guide piece in a cutting direction to cut the bottom portion of the fin material in a state where the guide piece is inserted between adjacent shoulder portions of the conveying corrugated fin material after the cutting blade passes the worms, as recited in claim 12.

Regarding Nozaki, Applicants note that this reference discloses a pair of worms 27, 29 that engage shoulder parts of a band material 25, wherein the worms 27, 29 are arranged so as to carry and stop the band material 25 (see Abstract). In Nozaki, at the ends of worms 17, 29, a stationary blade and movable blade 33 are disposed (see Abstract).

Applicants respectfully submit, however, that while Nozaki discloses worms which are able to carry and stop a band material, and a blade which is able to cut the band material, that Nozaki does not disclose or suggest a guide piece having a top portion smaller in width than a space formed between two worms so that the top portion is insertable between adjacent shoulder portions of the corrugated fin material, and a cutting blade movable in a conveying direction and along the guide piece in a cutting direction to cut the bottom portion of the fin material in a state

where the guide piece is inserted between adjacent shoulder portions of the conveying corrugated fin material after the cutting blade passes the worms, as recited in claim 12.

In view of the foregoing, Applicants respectfully submit that Maruyama and Nozaki, either alone or in combination, does not disclose, suggest or otherwise render obvious all of the features recited in new claim 12. Accordingly, Applicants submit that claim 12 is patentable over the cited prior art, an indication of which is kindly requested.

Regarding claim 13, Applicants note that this claim recites the features of moving a guide piece in a conveying direction in synchronization with a fin material that is being conveyed, the guide piece having a top portion smaller in width than a space formed between the worms so that the top portion is insertable between adjacent shoulder portions of the corrugated fin material; moving a cutting blade in the conveying direction; and moving the cutting blade along the guide piece in a cutting direction perpendicular to the conveying direction after the cutting blade passes the worms so as to cut the bottom portion of the corrugated fin material in a state where the guide piece is inserted between the adjacent shoulder portions of the corrugated fin material while the corrugated fin material is being conveyed in the conveying direction.

For at least similar reasons as discussed above with respect to claim 12, Applicants respectfully submit that the combination of Maruyama and Nozaki does not disclose, suggest or otherwise render obvious at least the above noted features recited in new claim 13. Accordingly, Applicants submit that claim 13 is patentable over the cited prior art, an indication of which is kindly requested.

VI. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may best be resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Kenji TOCHIGI et al.

By: Kenneth W. Fields

Kenneth W. Fields
Registration No. 52,430
Attorney for Applicants

KWF/dib
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
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